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Geographic Information Systems Fact Sheet

What is an information system? We are familiar with such everyday information systems as a telephone directory, a dictionary or encyclopedia, or computer database programs. Most businesses use information systems to keep track of inventory costs and quantity of stock.

At NASA's John C. Stennis Space Center in South Mississippi, researchers are using another type information system called a Geographic Information System, or GIS. GIS is a computerized way to take an in-depth look at a specific area on Earth through a series of layers, rods, buildings, etc.

There are several steps involved in creating a database for a GIS. The first step is to decide the boundaries of the study and locate available data that is required for this study. Information about the particular area is gathered through online searches in the World Wide Web and data catalogs. This can include data on roads, railroads, paths, trails, population, land ownership, topography, soils, drainage basins, and utility and telephone lines. This information may be obtained from satellite or airborne sensors, aerial photography, field surveys and other existing maps.

Points on different layers of a GIS are referenced by a latitude and longitude position. The information used, such as the type of road, the property owner's name, the land use category, etc., is then linked to the map data. This is the fundamental process for building a database.

The power of a GIS is its ability to take a great amount of information, capture it in a computer format and use it to help define options and make informed decisions. GIS also saves a great deal of time, accomplishing in a matter of hours what used to take weeks. Commercial GIS products that run on standard personal computers are available.

Geographic Information Systems have been used in almost every facet of natural resource management today. Oil companies use Geographic information Systems to assist in petroleum exploration, routing pipelines and siting production facilities. Timber companies continuously use GIS technology to help them decide where and when to harvest.

GIS technology has been beneficial in assessing damage from two major oil spills, one off the Alaskan

coast and one in the Persian Gulf. A Geographic Information System also helped government officials target cleanup efforts in environmentally sensitive areas. GIS is fast becoming an important technology tool. Because of its flexibility, a GIS can be easily adapted to the different needs of the user.

The ultimate benefit of a GLS is for use in a decision support system. People use the information available to help determine the most suitable course of action to manage and sustain our Earth's valuable natural resources.

For more information on GIS technology, contact the Stennis Space Center Commercial Remote Sensing Program Office at (601) 688-2042.

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